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10/516,367	12/01/2004	Hitoshi Iochi	L9289.04180	1448

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EXAMINER	
JUNTIMA, NITTAYA	
ART UNIT	**PAPER NUMBER**
2616	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/516,367	IOCHI ET AL.	
	Examiner	Art Unit	
	Nittaya Juntima	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 December 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/8/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 3/8/2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

2. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see the specification, page 12, lines 9-22 and page 13, lines 26-page 14, lines 2). See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

- on page 1, below the title and before the statement "This application is a 371...", a section heading "CROSS-REFERENCE TO RELATED APPLICATIONS" should be inserted;

- on page 1, line 4, after "07/10/2003," the phrase ", claiming priority based on Japanese Patent Application No. 2002-223828 filed on July 31, 2002, the contents of which are expressly incorporated herein by reference." should be inserted;

- on page 39, lines 16-19, the statement regarding related application should be removed;

- pages 45-50 should be deleted.

Appropriate correction is required.

Claim Objections

4. Claims 9-11 are objected to because of the following informalities:

- in claim 9, lines 3 and 4-5, "times of" should be deleted to put the claim more clear;

- in claim 10, line 4, "level" should be inserted after "quality";

line 7, a comma should be replaced with a period;

- in claim 11, line 4, "and" should be changed to "or."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, there is no linkage/relationship between the limitation "a confidence" in line 4 and the rest of the claim, and between the limitation "a decision" in line 7 and the rest of the claim. In addition, it is unclear whether "a confidence" in line 4 is the same as "a calculation result" in 6 and whether "a decision" in line 7 is the same as "a decision result" in lines 12-13. Therefore, the claim is vague and indefinite. In light of the specification, the Office is interpreting "a calculation result" in line 6 of claim 1 and line 4 of claim 2 as "the confidence", and interpreting "a decision result" in lines 12-13 of claim 1 as "the decision."

In claim 3, it is unclear how a reception quality on "a downlink channel" from the communicating apparatus or mobile terminal can be used to find the confidence. In light of the specification (page 17, lines 25-page 18, lines 7), the Office is interpreting "a downlink channel" as "an uplink channel."

In claim 12, similar to claim 1, the Office is interpreting "a calculation result" in line 11 and "a decision result" in lines 14-15 as "the confidence" and "the decision", respectively.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-3, 6, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malladi (US 2003/0210668 A1) in view of "*Energy requirements for US HS-DPCCH signaling with and without special pilot bits*" by Lucent Technologies (hereinafter "Lucent").

Regarding claim 1, as shown in Fig. 6, Malladi teaches a communication apparatus (node B 104) comprising:

A confidence calculator (signal quality estimator 650) that, when a signal on the uplink DPCCH is received, finds a confidence of the uplink DPCCH signal (the confidence reads on the SNR of the pilot symbols transmitted on the uplink DPCCH as shown in Figs. 1 and 2D estimated by a signal quality estimator 650). See paragraphs 0099-0100, see also paragraph 0071 and Fig. 4.

A decider (controller 640) that, based upon the confidence (the estimated SNR of the pilot symbols transmitted on the uplink DPCCH) in the confidence calculator, makes a decision as to whether a received signal (an uplink HS-DPCCH that was received with an ACK/NAK) representing a result of a reception of data at a communication apparatus (node B 104) is a positive acknowledgment signal (a received uplink HS-DPCCH with ACK) that represents a success of the reception at the communicating apparatus or a negative acknowledgment signal (a received uplink HS-DPCCH with NAK) that represents a failure of the reception (if the 3-way handshake is to be performed based on a LI indicator which is based on the estimated SNR of the pilot symbols, the controller 640 decides whether an ACK or a NAK was received by the serving node B in order to transmit an appropriate HARQ packet on the HS-DSCH to the UE). See paragraphs 0075 and 0101, and Fig. 4.

A retransmission controller (controller 640) that, based upon the decision in the decider, performs a retransmission control of the data (a retransmission control of the data is not further defined, reads on, when the 3-way handshake is performed, controller 640 transmits a prior

transmitted data packet in an HARQ packet when a NAK was received and transmits a new data packet in an HARQ packet when an ACK was received, paragraphs 0075 and 0100-0101).

The difference between claim 1 and Malladi is that the confidence calculator of Malladi finds a confidence (estimated SNR of pilots symbols) of the DPCCH, not a confidence of the signal (HS-DPCCH containing ACK/NAK, Figs. 1 and 2C) representing a result of a reception of data at a communicating apparatus when the signal is received as claimed.

However, as shown in Fig. 2, Lucent teaches that when the UE is in soft handoff state, a HS-DPCCH is modified by including special pilot bits when the pre-existing UL-DPCCH pilot bits fail to do their job both in terms of power control and channel estimation, see section 5 Special Pilot Bits. Therefore, when a power control is performed during soft handoff state, the SIR of the new pilot bits (processed before ACK/NAK) of the HS-DPCCH must be estimated and compared with the special pilot target SIR. See third paragraph of section 5 and section 9.

Since Malladi teaches finding a confidence of the DPCCH during soft handover (see paragraphs 0005-0007) and given the teaching of Lucent on using the modified HS-DPCCH with special pilot bits during a soft handoff state, it would have been obvious to one skilled in the art at the time the invention was made to modify the teaching of Malladi to include the modified HS-DPCCH with special pilot bits such that the confidence calculator would find a confidence (the estimated SIR of the new pilot bits) of a signal (the modified HS-DPCCH with special pilot bits with ACK/NAK as shown in Fig. 2 of Lucent) that represents a result of a reception of data at a communication apparatus, when the signal is received as claimed. The suggestion/motivation to do so would have been to using other criterion to determine whether a

UE is experiencing link imbalance as suggested by Malladi, paragraph 0103 (i.e., the received SNR of the new pilot bits and the new pilot target SNR of Lucent), and to improve the throughput of the base station by enabling it to just measure the SNR of the new pilot bits and receive the ACK/NAK from a single modified HS-DPCCH, thereby eliminating the need to switch between the DPCCH for pilot SNR and HS-DPCCH for ACK/NAK as in prior art.

Regarding claim 2, Malladi teaches that when the received signal (an uplink HS-DPCCH that was received with an ACK/NAK) is the positive acknowledgement (the received uplink HS-DPCCH contained an ACK), the decider (controller 640, Fig. 6) makes the decision based on the confidence (based on the LI indicator and a determination that the 3-way handshake is needed, when the controller 640 receives an ACK, the controller will transmit a HARQ packet comprising a new data packet, paragraphs 0075 and 0100-0101).

Regarding claim 3, the combined teaching of Malladi and Lucent teaches that the confidence calculator (Malladi, signal quality estimator 650, Fig. 6) uses a reception quality on an uplink channel (a reception quality on an uplink channel reads on SNR of the new pilot bits received on the modified UL HS-DPCCH, Fig. 2, Lucent) from the communicating apparatus for the confidence as claimed (see rejection of claim 1).

Regarding claim 6, Malladi does not teach wherein the reception quality is found based on a received symbol corresponding to a pilot signal multiplexed upon the positive acknowledgement signal or the negative acknowledgement signal transmitted from the communication apparatus.

However, Lucent teaches that the reception quality is found based on a received symbol corresponding to a pilot signal multiplexed upon the positive acknowledgement signal (a received uplink HS-DPCCH with ACK) or the negative acknowledgement signal (a received uplink HS-DPCCH with ACK) transmitted from the communication apparatus (the new pilot SIR is time multiplexed upon the modified HS-DPCCH with ACK/NAK in as shown in Fig. 2, and the new pilot SIR must be estimated or measured and compared with the new pilot target SIR for power control and channel estimation purposes, see sections 5 and 9).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to further modify the teaching of Malladi to include wherein the reception quality is found based on a received symbol corresponding to a pilot signal multiplexed upon the positive acknowledgement signal or the negative acknowledgement signal transmitted from the communication apparatus. The suggestion/motivation to do so would have been to improve the throughput of the base station as it can just measure the SNR of the new pilot bits and receive the ACK/NAK from a single modified HS-DPCCH without having to switch between the DPCCH and HS-DPCCH as in prior art.

Claim 12 is a method claim corresponding to apparatus claim 1, and is therefore rejected under the same reason set forth in the rejection of claim 1.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Malladi (US 2003/0210668 A1) in view of "*Energy requirements for US HS-DPCCH signaling with and without special pilot bits*" by Lucent Technologies (hereinafter "Lucent").

Regarding claim 7, the combined teaching of Malladi and Lucent does not explicitly teach that the reception quality is found based on pilot signals transmitted from the communication apparatus in a plurality of times of transmissions.

However, an official notice is taken that it is well known in the art to take a number of measurements of given signals over a period of time in order to minimize errors and improve accuracy/precision of the measured values under varying conditions. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to further modify the combined teaching of Malladi and Lucent such that the reception quality would be found based on pilot signals transmitted from the communication apparatus in a plurality of times of transmissions. The suggestion/motivation to do so would have been to minimize errors and improve accuracy of the reception quality of the pilot signals under varying conditions.

Allowable Subject Matter

10. Claims 4-5 and 8-11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nittaya Juntima whose telephone number is 571-272-3120. The examiner can normally be reached on Monday through Friday, 8:00 A.M - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nittaya Juntima
Patent Examiner, AU 2616
August 29, 2007